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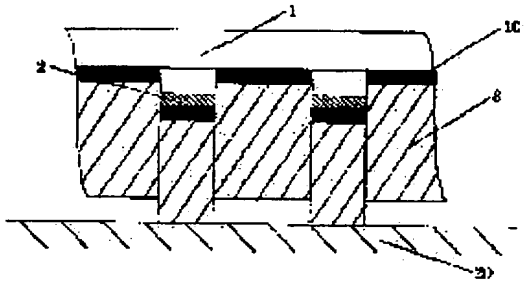
(54) SEAL FOR SEALING

(57)Abstract:
PROBLEM TO BE SOLVED: To obtain a seal for sealing excellent in productivity and capable of being easily sealed by providing a resin layer so as to cross an electric circuit.
SOLUTION: Since the resin layer 2 is stripped from a film base material I at the time of stripping the seal for sealing, the electric circuit 10 provided on the resin layer 2 remains on the side of a material to be bonded and the electric circuit 10 free from the resin layer 2 is striped off with the film base material 1 and the electric circuit 10 is cut. At this time, if the electric circuit is previously connected to an electrical detector, it is recognized that the electric circuit is cut and the seal for sealing is stripped. The film base material 1 is adequately selected from plastic films such as polyethylene, polypropylene, polyethylene terephthalate, vinyl chloride. The resin layer 2 is adequately provided using a strippable resin using a polyester resin, a long chain alkyl resin, a silicone resin, an acrylic resin or the like.



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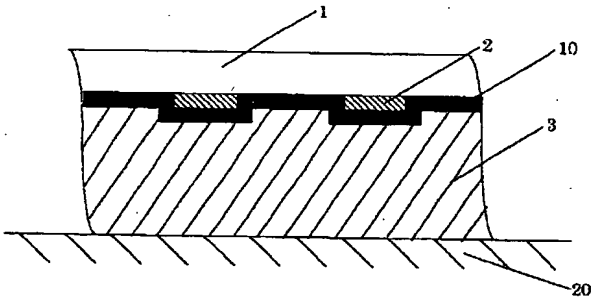
(54)【発明の名称】　封印シール

(57)【要約】
【課題】製造適性に優れた、開封を電気的に検知し易い封印シールを提供する。
【解決手段】一方の表面に部分的に剥離層を有するフィルム基材、その表面に設けられた電気回路、及び、少なくとも該電気回路表面に設けられた、被着体と十分に接着する接着剤とを有する封印シール。



【特許請求の範囲】
【請求項１】　一方の表面に部分的に樹脂層を有するフィルム基材、該基材の前記樹脂層を有する表面に設けられた電気回路、及び、前記フィルム基材の少なくとも電気回路表面に設けられた接着剤層とを有する封印シールであって、前記樹脂層が、電気回路を横断する如く設けられていることを特徴とする封印シール。
【請求項２】　電気回路が導電印刷によって設けられてなる請求項１に記載された封印シール。
【請求項３】　電気回路が、金属薄膜である請求項１に記載された封印シール。
【請求項４】　接着剤層表面に離型シートが設けられてなる、請求項１～３の何れかに記載された封印シール。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は封印シールに関し、特に、封印後の開封を電気的に検知するに適した封印シールに関する。
【０００２】
【従来の技術】近年のコンピュータ技術の発展は目覚ましく、その応用は広がる一方であり、例えばパチンコ台の出玉制御にも応用されている。このようなゲーム装置においては、客寄せのために或いは客が違法に、使用されているＲＯＭ等を入れ換えるという問題が発生する。そこで、かかる改造を防止するために、ＲＯＭなどの主要な部品や、それらの電子部品を実装した基板を収納するケースに封印をすることが行われ、最近においては、そのための封印シールとして、一度貼着されたものを剥離すると容易に電気的に検知されるような、導電部材を組み込んだものも提案されている（特開平８－２２１６７６号公報）。
【０００３】
【発明が解決しようとする課題】しかしながら、上記の封印シールには、強接着性の接着剤と弱接着性の接着剤が組み合わされて用いられているので、その製造方法は煩雑であり、コスト高になり易いという欠点があった。そこで、本発明者らは、上記の欠点を解決すべく鋭意検討した結果、例えば、ストライプ状に剥離処理したフィルム基材表面に導電印刷によって電気回路を設けることにより、極めて簡便に製造することのできる、電気的に開封を検知し易い封印シールとすることができることを見出し、本発明に到達した。従って本発明の目的は、製造適性に優れると共に電気的に検知し易い封印シールを提供することにある。
【０００４】
【課題を解決するための手段】本発明の上記の目的は、一方の表面に樹脂層を有するフィルム基材、該基材の前記樹脂層を有する表面に設けられた電気回路、及び、前記フィルム基材の少なくとも電気回路表面に設けられた接着剤層とを有する封印シールであって、前記樹脂層が、電気回路を横断する如く設けられていることを特徴とする封印シールによって達成された。
【０００５】
【発明の実施の形態】図１は本発明の封印シールを被着体に貼着したときの断面の概略図である。図中の符号１はフィルム基材、２は樹脂層、３は接着剤層、１０は電気回路、２０は被着体である。本発明の封印シールを剥がそうとすると図２に示すように樹脂層２がフィルム基材１から剥がれるので、樹脂層２の上に設けられた電気回路１０は被着体側に残り、樹脂層２のない部分の電気回路１０はフィルム基材１と共に剥がされ、電気回路１０が切断する。このとき、予め電気回路１０を電気的検知器に接続してあれば、電気回路１０が切断し、封印シールが剥がされたことを検知することができる。
【０００６】本発明におけるフィルム基材は、ポリエチレン、ポリプロピレン、ポリエチレンテレフタレート、塩化ビニル等の公知のプラスチックフィルムの中から適宜選択することができる。本発明における樹脂層は、フィルム基材に対して剥離性を示すものであれば良く、ポリエステル樹脂、長鎖アルキル樹脂、シリコーン樹脂、アクリル樹脂等を用いた公知の剥離性樹脂を用いて適宜設けることができる。
【０００７】この樹脂層は、後にフィルム基材表面に設ける電気回路を横断するように、例えばストライプ状や斑点状に設ける。このような、部分的に設けられる樹脂層は、後に電気回路を設けたときに、該回路を樹脂層が横断する箇所が生ずる限り、その設けられ方は特に限定されるものではない。
【０００８】電気回路は、前記部分的に剥離処理されたフィルム基材の表面に、電導性インクをスクリーン印刷等の手段を用いて印刷することにより、或いはパターン状に前記剥離処理されたフィルム基材の表面に、銅やアルミニウム等の電気伝導性金属の蒸着膜や金属箔等の金属薄層を設けることにより形成する。
【０００９】被着体に接着させる封印シールの接着剤面には離型シートを設けておくことが好ましい。離型シートを有する封印シールを使用する場合には、先ず、封印シールから離型シートを剥がした後、被着体に貼着する。本発明の封印シールを製造する際の接着剤層に用いる接着剤は、剥離させようとすると、樹脂層及びその上に設けられた電気回路が接着剤層と共に被貼着体側に残ることが必要なので、その接着力は、フィルム基材と樹脂層との接着力より十分大きければ良く、被着体と剥離不能に接着する必要はない。
【００１０】従って、電気回路が破断する程度の接着強度を有するものである限り、通常の接着剤であっても、その他の感圧接着剤或いは感熱接着剤であっても良く、特に限定されるものではない。尚、離型シートとしては、ポリエチレンラミネート紙、グラシン紙或いはプラスチックフィルム等にシリコーン樹脂等の離型剤を塗布

した公知のものが使用できる。

【００１１】

【実施例】以下、本発明を実施例によって更に詳述するが、本発明はこれによって限定されるものではない。

【００１２】実施例１．５０μｍのポリエステルフィルム基材１の表面に、ストライプ状に長鎖アルキル樹脂（一方油脂工業株式会社製の商品名、ピーロイル１０１０）を厚さ２μｍとなるように印刷し、樹脂層２を設けた。次に、該樹脂層２を設けたフィルム基材表面に、前記樹脂層によって横断されるように、パターン状に銀カーボンペーストからなる導電インクを、厚さが８μｍとなるように印刷し、電気回路１０を設けた。

【００１３】一方、ポリエチレンラミネート紙に離型処理した離型シートの離型処理面に、アクリル系感圧接着剤（リンテック株式会社製の商品名ＰＡ－Ｔ１）を、乾燥膜圧が２０μｍとなるように塗布し乾燥した。得られた、接着剤層３を有する離型シートの接着剤面と前記フィルム基材の電気回路面を貼着し、離型シートを有する封印シールを得た。

【００１４】実施例２．５０μｍのポリエステルフィルム基材１の表面に、ストライプ状に長鎖アルキル樹脂（一方油脂工業株式会社製の商品名、ピーロイル１０１０）を厚さ２μｍとなるように印刷し、樹脂層２を設けた。次に、該樹脂層２を設けたフィルム基材表面に、アクリル系感圧接着剤（リンテック株式会社製ＰＡ－Ｔ１）を乾燥膜圧が１５μｍとなるように塗布し、予めパターン状に切断したアルミ箔（７μｍ）を貼着し、電気回路１０を設けた。

【００１５】一方、ポリエチレンラミネート紙に離型処理した離型シートの離型処理面に、アクリル系感圧接着剤（リンテック株式会社製の商品名ＰＡ－Ｔ１）を、乾燥膜圧が２０μｍとなるように塗布し乾燥して、接着剤層３を設けた。得られた離型シートの接着剤層３の面と前記フィルム基材の電気回路面を貼着し、離型シートを有する封印シールを得た。

【００１６】実施例１及び実施例２で得られた封印シールの電気回路を電気的検知器に接続し、被着体に貼着した後封印シールを剥がそうとしたところ、電気回路が切断し、封印シールを剥がそうとしたことが検知された。

【００１７】

【発明の効果】本発明の封印シールは接着強度の異なる複数の接着剤を塗り分けるという必要がないので、その製造は従来技術に基づいて容易に行うことができる。

【図面の簡単な説明】

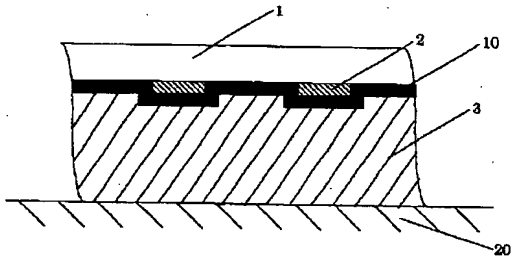
【図１】本発明の封印シールを被着体に貼着した状態を表す断面概念図である。

【図２】図１の封印シールを被着体から剥がしたときの状態を説明する断面概念図である。

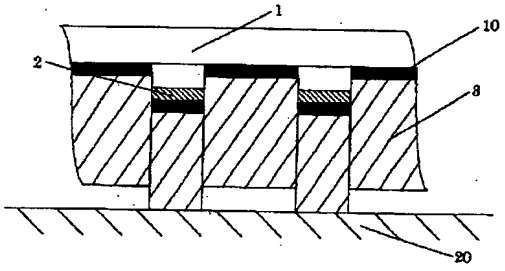
【符号の説明】

１　フィルム基材
２　樹脂層
３　接着剤層
１０　電気回路
２０　被着体

【図１】



【図２】



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JAPANESE [JP,11-030957,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS EXAMPLE DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] The seal seal which is a seal seal which has the electrical circuit established in the front face which has said resin layer of the film base material which has a resin layer selectively on the surface of one side, and this base material, and the adhesives layer of said film base material prepared in the electrical circuit front face at least, and is characterized by preparing said resin layer so that an electrical circuit may be crossed.
[Claim 2] The seal seal indicated by claim 1 in which it comes to prepare an electrical circuit by electric conduction printing.
[Claim 3] The seal seal indicated by claim 1 whose electrical circuit is a metal thin film.
[Claim 4] The seal seal indicated by any of claims 1-3 which come to prepare a mold release sheet in an adhesives layer front face they are.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] Especially this invention relates to the seal seal suitable for detecting opening after a seal electrically about a seal seal.
[0002]
[Description of the Prior Art] Development of computer technology in recent years is remarkable, and the application is applied [which is spreading steadily] also to reward-balls control of a pachinko base. In such game equipment, the problem that a visitor replaces illegally ROM currently used since it is an attraction occurs. Then, sealing in the case which contains the substrate which mounted components with main ROM etc. and those electronic parts, in order to prevent this modification is performed, and in recently, if what was stuck once is exfoliated as a seal seal for it, the thing incorporating a conductive member which is detected electrically easily is also proposed (JP,8-221676,A).
[0003]
[Problem(s) to be Solved by the Invention] However, since the adhesives of a strong adhesive property and the adhesives of a weak adhesive property were put together and it was used for the above-mentioned seal seal, the manufacture approach had the fault of it having been complicated and being easy to become cost high. Then, this invention persons reached [that it can consider as the seal seal which can be manufactured very simple and which is easy to detect opening electrically, and] the shape of a stripe as a result of inquiring wholeheartedly that the above-mentioned fault should be solved at a header and this invention by establishing an electrical circuit in the film base material front face which carried out exfoliation processing by electric conduction printing. Therefore, the object of this invention is to offer the seal seal which is easy to detect electrically while it is excellent in manufacture fitness.
[0004]
[Means for Solving the Problem] It was attained by the seal seal which the above-mentioned object of this invention is a seal seal which has the electrical circuit established in the front face which has said resin layer of the film base material which has a resin layer on the surface of one side, and this base material, and the adhesives layer of said film base material prepared in the electrical circuit front face at least, and is characterized by being prepared so that said resin layer may cross an electrical circuit.
[0005]
[Embodiment of the Invention] Drawing 1 is the schematic diagram of the cross section when sticking the seal seal of this invention on adherend. For a film base material and 2, as for an adhesives layer and 10, a resin layer and 3 are [the sign 1 in drawing / an electrical circuit and 20] adherends. Since the resin layer 2 will separate from the film base material 1 as shown in drawing 2 if it is going to remove the seal seal of this invention, the electrical circuit 10 prepared on the resin layer 2 remains in an adherend side, the electrical circuit 10 of a part without the resin layer 2 is removed with the film base material 1, and an electrical circuit 10 disconnects it. If the electrical circuit 10 is beforehand connected to the electric detector at this time, an electrical circuit 10 can cut and it can detect that the seal seal was removed.
[0006] The film base material in this invention can be suitably chosen from well-known plastic films, such as polyethylene, polypropylene, polyethylene terephthalate, and a vinyl chloride. The resin layer in this invention can be suitably prepared using the well-known detachability resin using polyester resin, long-chain alkyl resin, silicone resin, acrylic resin, etc. that what is necessary is just what shows detachability to a film base material.
[0007] This resin layer is prepared in the shape of a stripe, or punctate so that the electrical circuit behind established in a

film base material front face may be crossed. When an electrical circuit is prepared behind, as long as the part where a resin layer crosses this circuit produces such a resin layer prepared selectively, especially the way of being prepared is not limited.

[0008] on the front face of said film base material by which exfoliation processing was carried out selectively, conductive ink is used for an electrical circuit and it prints means, such as screen-stencil, -- or it forms in the shape of a pattern by preparing metal thin layers, such as vacuum evaporationo film of electrical conductivity metals, such as copper and aluminum, and a metallic foil, in the front face of said film base material by which exfoliation processing was carried out.

[0009] It is desirable to prepare a mold release sheet in the adhesive coated surface of the seal seal pasted up on adherend. In using the seal seal which has a mold release sheet, after removing a mold release sheet from a seal seal, it sticks on adherend first. Since it is the need that the electrical circuit prepared a resin layer and on it remains in a stuck body side with an adhesives layer when it is going to make the adhesives used for the adhesives layer at the time of manufacturing the seal seal of this invention exfoliate, it is not necessary to paste up the adhesive strength on adherend and exfoliation impossible that what is necessary is just more greatly enough than the adhesive strength of a film base material and a resin layer.

[0010] Therefore, as long as it has the bond strength which is extent which an electrical circuit fractures, it may be the usual adhesives, or you may be other pressure sensitive adhesives or sensible-heat adhesives, and it is not limited especially. In addition, as a mold release sheet, the well-known thing which applied release agents, such as silicone resin, to a BORIECHIREN laminated paper, glassine, or a plastic film can be used.

[0011]

[Example] Hereafter, this invention is not limited by this although this invention is further explained in full detail according to an example.

[0012] It printed on the front face of the polyester film base material 1 of 1.50 micrometers of examples so that it might become stripe-like with 2 micrometers in thickness about long-chain alkyl resin (the trade name by fat-and-fatty-oil-industry incorporated company on the other hand, PIROIRU 1010), and the resin layer 2 was formed in it. Next, the electric conduction ink which consists pattern-like of silver carbon paste was printed on the film base material front face in which this resin layer 2 was formed so that thickness might be set to 8 micrometers, and the electrical circuit 10 was established in it so that it might cross by said resin layer.

[0013] It applied and dried so that desiccation film pressure might become with 20 micrometers on the other hand in the mold release processing side of the mold release sheet which carried out mold release processing at a polyethylene laminated paper about an acrylic pressure sensitive adhesive (trade name PA-T1 by LINTEC Corp.). The acquired adhesive coated surface of the mold release sheet which has the adhesives layer 3, and the electrical circuit side of said film base material were stuck, and the seal seal which has a mold release sheet was obtained.

[0014] It printed on the front face of the polyester film base material 1 of 2.50 micrometers of examples so that it might become stripe-like with 2 micrometers in thickness about long-chain alkyl resin (the trade name by fat-and-fatty-oil-industry incorporated company on the other hand, PIROIRU 1010), and the resin layer 2 was formed in it. Next, the acrylic pressure sensitive adhesive (PA[by LINTEC Corp.]- T1) was applied to the film base material front face in which this resin layer 2 was formed so that desiccation film pressure might be set to 15 micrometers, the aluminum foil (7 micrometers) beforehand cut in the shape of a pattern was stuck on it, and the electrical circuit 10 was established in it.

[0015] On the other hand, it applied and the acrylic pressure sensitive adhesive (trade name PA-T1 by LINTEC Corp.) was dried to the mold release processing side of the mold release sheet which carried out mold release processing at the polyethylene laminated paper so that desiccation film pressure might become with 20 micrometers, and the adhesives layer 3 was formed in it. The field of the adhesives layer 3 of the obtained mold release sheet and the electrical circuit side of said film base material were stuck, and the seal seal which has a mold release sheet was obtained.

[0016] When it was going to remove the seal seal after connecting to the electric detector the electrical circuit of the seal seal obtained in the example 1 and the example 2 and sticking on adherend, the electrical circuit cut and it was detected that it was going to remove the seal seal.

[0017]

[Effect of the Invention] Since it is not necessary to say that the seal seal of this invention distinguishes by different color two or more adhesives with which bond strength differs with, the manufacture can be easily performed based on the conventional technique.

[Translation done.]

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[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is a cross-section conceptual diagram showing the condition of having stuck the seal seal of this invention on adherend.
[Drawing 2] It is a cross-section conceptual diagram explaining the condition when removing the seal seal of drawing 1 from adherend.
[Description of Notations]
1 Film Base Material
2 Resin Layer
3 Adhesives Layer
10 Electrical Circuit
20 Adherend

[Translation done.]